

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:32:14 ; Search time 35 Seconds

(without alignments)  
31.745 Million cell updates/sec

Title: US-09-989-994-1201

Perfect score: 36

Sequence: 1 TSGHLSR 7

Scoring table:

BIOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1107863 seqs, 158726573 residues

Total number of hits satisfying chosen parameters: 2

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%

Maximum Match 100%  
Listing first 2000 summaries

Database :

1: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1980.DAT:\*  
2: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1981.DAT:\*  
3: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1982.DAT:\*  
4: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1983.DAT:\*  
5: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1984.DAT:\*  
6: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1985.DAT:\*  
7: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1986.DAT:\*  
8: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1987.DAT:\*  
9: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1988.DAT:\*  
10: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1989.DAT:\*  
11: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1990.DAT:\*  
12: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1991.DAT:\*  
13: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1992.DAT:\*  
14: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1993.DAT:\*  
15: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1994.DAT:\*  
16: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1995.DAT:\*  
17: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1996.DAT:\*  
18: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1997.DAT:\*  
19: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1998.DAT:\*  
20: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA1999.DAT:\*  
21: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2000.DAT:\*  
22: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2001.DAT:\*  
23: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2002.DAT:\*  
24: /SIDSI/gcgdata/geneseq/geneseq-emb1/AA2003.DAT:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	36	100.0	7	23	ABP03962
2	36	100.0	7	23	ABP48959

#### ALIGNMENTS

RESULT 1  
ABP03962

ID	ABP03962	standard; Peptide; 7 AA.	
XX	AC	ABP03962;	
XX	DT	25-SEP-2002 (first entry)	
XX	DE	Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 247.	
XX	XX	Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;	
XX	KW	diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;	
XX	KW	gene therapy; antiatherosclerotic; vasotrophic; antiarthritic; vulnerary;	
XX	KW	antitumor; cytostatic; antipsoriatic; antidiabetic; ophthalmological;	
XX	XX	osteopathic; antifertility.	
OS	XX	Homo sapiens.	
XX	XX	NC0200246412-A2	
XX	PD	13-JUN-2002.	
XX	XX	06-DEC-2001; 2001MO-US46681.	
XX	XX	07-DEC-2000; 2000US-0733604.	
XX	XX	12-DEC-2000; 2000US-0736083.	
XX	XX	30-APR-2001; 2001US-0846033.	
XX	PA	(SANG-) SANGAMO BIOSCIENCES INC.	
XX	PI	Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP;	
XX	PI	Jarvis E;	
XX	XX	WPI; 2002-527918/56.	
XX	XX	New zinc finger protein that binds to target site in vascular	
XX	XX	endothelial growth factor gene, useful for modulating expression of the	
XX	XX	gene and for treating atherosclerosis, ischemia, arthritis, wound or	
XX	XX	ulcer	
XX	XX	Claim 4; Page 103; 195pp; English.	
XX	XX	The present invention relates to a zinc finger protein that binds to a	
XX	XX	target site in one or more vascular endothelial growth factor (VEGF)	
XX	XX	genes. The protein is useful for modulating expression of a VEGF gene,	
XX	XX	thereby regulating angiogenesis and vasculogenesis. This can be used to	
XX	XX	treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumours,	
XX	XX	diabetic retinopathy or psoriasis. The present sequence is a peptide	
XX	XX	shown in the invention.	
XX	XX	Sequence 7 AA;	
XX	XX	Query Match	
XX	XX	Best local similarity 100.0%; Score 36; DB 23; Length 7;	
XX	XX	Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	
XX	XX	1 TSGHLSR 7	
XX	XX	1 TSGHLSR 7	
XX	XX	ABP48959	
XX	XX	ABP48959 standard; Peptide; 7 AA.	
XX	XX	AC	ABP48959;
XX	XX	DT	28-AUG-2002 (first entry)
XX	XX	XX	Zinc finger protein related peptide motif SEQ ID NO:1201.
XX	XX	XX	Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX	XX	XX	Homo sapiens.
XX	XX	OS	Synthetic.

XX WO200242459-A2.  
PN 30-MAY-2002.  
XX  
PD 20-NOV-2001; 2001WO-US43438.  
XX  
PF 20-NOV-2000; 2000US-0716637.  
XX  
PR (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
PA  
XX  
PI Liu Q;  
XX  
XX WPI; 2002-500284/53.  
DR  
XX  
PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus  
XX  
XX Claim 1; Page 44; 81pp; English.  
PS  
XX  
CC The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3',-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target subsite. Also described are: (i) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target subsite, selecting the F2 zinc finger such  
CC that it binds to the S2 target subsite, and selecting the F3 zinc  
CC finger such that it binds to the S3 target subsite, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target subsites having the nucleotide G in the 5'-most position of the  
CC subsite. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.  
XX  
SQ Sequence 7 AA;  
Query Match 100.0%; Score 36; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 TSGHLSR 7  
|||  
|||  
Db 1 TSGHLSR 7

Search completed: February 23, 2004, 11:42:07  
Job time : 35 secs

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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:40:23 ; Search time 12.6667 Seconds  
(without alignments)  
23.382 Million cell updates/sec

Title: US-09-989-994-1201  
Perfect score: 36  
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 328717 seqs, 42310858 residues

Total number of hits satisfying chosen parameters: 0

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 100%

Maximum Match 100%  
Listing first 200 summaries

Database :

- 1: /cgn2\_6/prodata/1/1aa/5A\_COMB.pep:\*
- 2: /cgn2\_6/prodata/1/1aa/5B\_COMB.pep:\*
- 3: /cgn2\_6/prodata/1/1aa/6A\_COMB.pep:\*
- 4: /cgn2\_6/prodata/1/1aa/6B\_COMB.pep:\*
- 5: /cgn2\_6/prodata/1/1aa/PCTUS\_COMB.pep:\*
- 6: /cgn2\_6/prodata/1/1aa/backfiles1.pep:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match Length	ID	Description
-----				

No matches found

Search completed: February 23, 2004, 11:45:56  
Job time : 12.6667 secs

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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:42:13 ; Search time 27 Seconds

(without alignments)  
54.284 Million cell updates/sec

Title: US-09-989-994-1201

Perfect score: 36

Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62

Searched: 801455 seqs, 209382283 residues

Total number of hits satisfying chosen parameters: 5

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%  
Maximum Match 100%  
Listing first 2000 summaries

Database:

Published Applications AA:\*

- 1: /cgn2\_6/prodata/1/pubppa/US07\_PUBCOMB.pep.\*
- 2: /cgn2\_6/prodata/1/pubppa/PCRT\_NEW\_PUB.pep.\*
- 3: /cgn2\_6/prodata/1/pubppa/US06\_NEW\_PUB.pep.\*
- 4: /cgn2\_6/prodata/1/pubppa/US06\_PUBCOMB.pep.\*
- 5: /cgn2\_6/prodata/1/pubppa/US07\_NEW\_PUB.pep.\*
- 6: /cgn2\_6/prodata/1/pubppa/PCRTUS\_PUBCOMB.pep.\*
- 7: /cgn2\_6/prodata/1/pubppa/US08\_NEW\_PUB.pep.\*
- 8: /cgn2\_6/prodata/1/pubppa/US08\_PUBCOMB.pep.\*
- 9: /cgn2\_6/prodata/1/pubppa/US09\_PUBCOMB.pep.\*
- 10: /cgn2\_6/prodata/1/pubppa/US09B\_PUBCOMB.pep.\*
- 11: /cgn2\_6/prodata/1/pubppa/US09C\_PUBCOMB.pep.\*
- 12: /cgn2\_6/prodata/1/pubppa/US09\_NEW\_PUB.pep.\*
- 13: /cgn2\_6/prodata/1/pubppa/US10A\_PUBCOMB.pep.\*
- 14: /cgn2\_6/prodata/1/pubppa/US10B\_PUBCOMB.pep.\*
- 15: /cgn2\_6/prodata/1/pubppa/US10C\_PUBCOMB.pep.\*
- 16: /cgn2\_6/prodata/1/pubppa/US10\_NEW\_PUB.pep.\*
- 17: /cgn2\_6/prodata/1/pubppa/US60\_NEW\_PUB.pep.\*
- 18: /cgn2\_6/prodata/1/pubppa/US60\_PUBCOMB.pep.\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	36	100.0	7	9	US-09-989-789-1201
2	36	100.0	7	11	US-09-846-033B-247
3	36	100.0	7	11	US-09-990-186-1201
4	36	100.0	7	11	US-09-989-994-1201
5	36	100.0	7	15	US-10-006-069A-247

#### ALIGNMENTS

RESULT 1  
US-09-989-789-1201  
; Sequence 1201, Application US/09989789  
; Patent No. US20020063379A1  
; GENERAL INFORMATION:

APPLICANT: L1U, Qiang  
; TITLE OF INVENTION: POSITION DEPENDENT RECOGNITION OF GNN NUCLEOTIDE  
; TITLE OF INVENTION: TRIPLETS BY ZINC FINGERS  
; FILE REFERENCE: 8325-0011.20 / 511-US2  
; CURRENT FILING DATE: 2002-03-25  
; NUMBER OF SEQ ID NOS: 4085  
; SOFTWARE: Patentip Ver. 2.0  
; SEQ ID NO 1201  
; LENGTH: 7  
; TYPE: PRT  
; ORGANISM: Artificial Sequence  
; FEATURE:  
; OTHER INFORMATION: Description of Artificial Sequence: example ZFP  
US-09-989-789-1201

Query Match 100.0%; Score 36; DB 9; Length 7;  
Best Local Similarity 100.0%; Pred. No. 7.1e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSGHLSR 7  
|||  
Db 1 TSGHLSR 7

RESULT 2  
US-09-846-033B-247  
; Sequence 247, Application US/09846033B  
; Publication No. US2003004404A1  
; GENERAL INFORMATION:  
; APPLICANT: Rebar, Edward  
; APPLICANT: Jamieson, Andrew  
; APPLICANT: Liu, Qiang  
; APPLICANT: Liu, Pei-Qi  
; APPLICANT: Wolfe, Alan  
; APPLICANT: Eisenberg, Stephen P.  
; APPLICANT: Ustavis, Eric  
; APPLICANT: Sangamo Biosciences, Inc.  
; TITLE OF INVENTION: Regulation of Angiogenesis With Zinc  
; FILE REFERENCE: 019496-005820US  
; CURRENT APPLICATION NUMBER: US/09/846,033B  
; PRIOR FILING DATE: 2001-04-30  
; PRIOR APPLICATION NUMBER: US 09/733,604  
; PRIOR FILING DATE: 2000-12-07  
; PRIOR APPLICATION NUMBER: US 09/736,083  
; PRIOR FILING DATE: 2000-12-12  
; NUMBER OF SEQ ID NOS: 252  
; SOFTWARE: FastSeq for Windows Version 3.0  
; SEQ ID NO 247  
; LENGTH: 7  
; TYPE: PRT  
; ORGANISM: Artificial Sequence  
; FEATURE:  
; OTHER INFORMATION: finger  
US-09-846-033B-247

Query Match 100.0%; Score 36; DB 11; Length 7;  
Best Local Similarity 100.0%; Pred. No. 7.1e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSGHLSR 7  
|||  
Db 1 TSGHLSR 7

RESULT 3  
US-09-990-186-1201  
; Sequence 1201, Application US/09990186  
; Publication No. US20030068675A1  
; GENERAL INFORMATION:  
; APPLICANT: L1U, Qiang  
; TITLE OF INVENTION: POSITION DEPENDENT RECOGNITION OF GNN NUCLEOTIDE

*Methods*

```
; TITLE OF INVENTION: TRIPLETS BY ZINC FINGERS
; FILE REFERENCE: 8325-0011.21 / S11-US3
; CURRENT APPLICATION NUMBER: US/09/990,186
; CURRENT FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 4085
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1201
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: example ZFP
US-09-990-186-1201

Query Match
Best Local Similarity 100.0%; Score 36; DB 11; Length 7;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSGHLSR 7
   |||||
Db 1 TSGHLSR 7

RESULT 4
US-09-989-994-1201
; Sequence 1201, Application US/09989994
; Publication No. US20030104526A1
; GENERAL INFORMATION:
; APPLICANT: LIU, Qiang
; TITLE OF INVENTION: POSITION DEPENDENT RECOGNITION OF GNN NUCLEOTIDE
; TITLE OF INVENTION: TRIPLETS BY ZINC FINGERS
; FILE REFERENCE: 8325-0011.20 / S11-US2
; CURRENT APPLICATION NUMBER: US/09/989,994
; CURRENT FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 4085
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1201
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: example ZFP
US-09-989-994-1201

Query Match
Best Local Similarity 100.0%; Score 36; DB 11; Length 7;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSGHLSR 7
   |||||
Db 1 TSGHLSR 7

RESULT 5
US-10-006-069A-247
; Sequence 247, Application US/10006069A
; Publication No. US2003021776A1
; GENERAL INFORMATION:
; APPLICANT: Rebar, Edward
; APPLICANT: Jamieson, Andrew
; APPLICANT: Liu, Qiang
; APPLICANT: Liu, Pei-Qi
; APPLICANT: Wolfe, Alan
; APPLICANT: Eisenberg, Stephen P.
; APPLICANT: Jarvis, Eric
; APPLICANT: Sangamo Biosciences, Inc.
; TITLE OF INVENTION: Regulation of Angiogenesis With Zinc
; TITLE OF INVENTION: Finger Proteins
; FILE REFERENCE: 019496-005630US
; CURRENT APPLICATION NUMBER: US/10/006,069A
; CURRENT FILING DATE: 2001-12-17
; PRIOR APPLICATION NUMBER: US 09/733,604
; PRIOR FILING DATE: 2000-12-07
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; PRIOR APPLICATION NUMBER: US 09/736,083
; PRIOR FILING DATE: 2000-12-12
; PRIOR APPLICATION NUMBER: US 09/846,033
; PRIOR FILING DATE: 2001-04-30
; NUMBER OF SEQ ID NOS: 252
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 247
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: finger
US-10-006-069A-247

Query Match
Best Local Similarity 100.0%; Score 36; DB 15; Length 7;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 TSGHLSR 7
   |||||
Db 1 TSGHLSR 7
```

Search completed: February 23, 2004, 11:47:32  
Job time : 27 secs

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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:37:34 ; Search time 11.6667 Seconds  
(without alignments)  
57.701 Million cell updates/sec

Title: US-09-989-994-1201

Perfect score: 36

Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283308 seqs, 96166682 residues

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%

Maximum Match 100%

Listing first 2000 summaries

#### SUMMARIES

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Result No.	Score	Query Match	Length DB	ID	Description
1	36	100.0	220	2	S45927

#### ALIGNMENTS

#### RESULT 1

S45927 Probable finger protein YBR066C - Yeast (Saccharomyces cerevisiae)

N/Alternate names: hypothetical protein YBR0616

C/Species: Saccharomyces cerevisiae

C/Date: 26-Aug-1994 #sequence\_revision 09-Sep-1994 #text\_change 19-Apr-2002

C/Accession: S45927; S45926

R/Feldmann, H.; Mannhaupt, G.; Schwarzlose, C.; Vetter, I.

submitted to the Protein Sequence Database, August 1994

A/Accession: S45927

A/Molecule type: DNA

A/Residues: 1-187 <FEL>

A/Cross-references: EMBL:Z35935; MIPS:YBR066C

A/Experimental source: strain S288C

A/Reference number: S45926

A/Molecule type: DNA

A/Residues: 124-220 <DOM>

A/Cross-references: EMBL:Z35935; MIPS:YBR066C

A/Experimental source: strain S288C

C/Genetics: SGD:NRG2

A/Cross-references: SGD:S0000270

A/Map position: 2R

A/Note: YBR066C

C/Keywords: nucleus; zinc finger

F;155-175/Region: zinc finger

F;183-205/Region: zinc finger

Query Match

Best Local Similarity 100.0%; Score 36; DB 2; Length 220;

Best Match 7; Conservativity 0; Mismatches 0; Indels 0; Gaps 0;

Matches 7; Conservativity 0; Mismatches 0; Indels 0; Gaps 0;

Search completed: February 23, 2004, 11:45:05

Job time: 11.6667 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:35:04 ; Search time 7.66667 Seconds  
(without alignments)  
42.937 Million cell updates/sec

Title: US-09-989-994-1201

Perfect score: 36  
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62  
Gapop 10.0, Gapext 0.5

Searched: 127863 seqs, 47026705 residues

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%  
Maximum Match 100%  
Listing first 2000 summaries

Database: SwissProt\_41:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	36	100.0	220	1 NR02_YEAST	P38082 saccharomyces

## ALIGNMENTS

RESULT 1  
NR02\_YEAST STANDARD; PRT; 220 AA.  
AC P38082;  
DT 01-OCT-1994 (Rel. 30, Created)  
DT 28-FEB-2003 (Rel. 41, Last sequence update)  
DT 28-FEB-2003 (Rel. 41, Last annotation update)  
DE Probable transcriptional regulator NR02.  
GN NR02 OR YBR066C OR YBR0616.  
OS Saccharomyces cerevisiae (Baker's yeast).  
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;  
OC Saccharomycetales; Saccharomycetaceae; Saccharomycetes.  
OX NCBI\_TaxID=4932;  
RN [1]  
RP SEQUENCE OF 1-187 FROM N.A.  
RC STRAIN=S289C;  
RA Feldmann H., Manhaupt G., Schwarzlase C., Vetter I.;  
RL Submitted (Aug-1994) to the EMBL/GenBank/DBJ databases.  
RN [2]  
RP SEQUENCE OF 124-220 FROM N.A.  
RC STRAIN=S289C;  
RA Domdey H., Gassenhuber H., Obermaier B., Piravandi E.;  
RL Submitted (Aug-1994) to the EMBL/GenBank/DBJ databases.  
CC -1- FUNCTION: Transcriptional repressor (by similarity).  
CC -1- SUBCELLULAR LOCATION: Nuclear (Potential).  
CC -1- SIMILARITY: Contains 2 C2H2-type zinc fingers.  
CC -----

CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
CC the European Bioinformatics Institute. There are no restrictions on its  
CC use by non-profit institutions as long as its content is in no way  
CC modified and this statement is not removed. Usage by and for commercial  
CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
CC -----  
DR EMBL; Z35935; CA85010.1; -.  
DR PIR; S45927; S45927.  
DR TRASNFRAC; T03517; -.  
DR SGD; S0000270; NR02.  
DR GO; GO:0005634; C:nucleus; IC.  
DR GO; GO:0016564; F:transcriptional repressor activity; IDA.  
DR GO; GO:0007125; P:invasive growth; IDA.  
DR InterPro; IPR007087; Znf\_C2H2.  
DR Pfam; PF00096; zf-C2H2; 2.  
DR SMART; SM00355; ZNF\_C2H2; 2.  
DR PROSITE; PS00028; ZINC\_FINGER\_C2H2\_1; 2.  
DR PROSITE; PS00157; ZINC\_FINGER\_C2H2\_2; 2.  
KW DNA-binding; Nuclear protein; Zinc-finger; Metal-binding; Repressor;  
KW Transcription regulation; Repeat.  
FT ZN FING 153 175 C2H2-TYPE 1.  
FT ZN FING 181 205 C2H2-TYPE 2.  
SQ SEQUENCE 220 AA; 25009 MW; 8EA18F326910F1FB CRC64;

Query Match 100.0%; Score 36; DB 1; Length 220;  
Best local Similarity 100.0%; Pred. No. 0.97;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

CY 1 TSGHLSR 7  
DB 164 TSGHLSR 170

Search completed: February 23, 2004, 11:42:41  
Job time : 7.66667 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:36:14 ; Search time 27.6667 Seconds  
(without alignments)  
65.290 Million cell updates/sec

Title: US-09-989-994-1201  
Perfect score: 36  
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 830525 seqs, 258052604 residues

Total number of hits satisfying chosen parameters: 0

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%  
Maximum Match 100%  
Listing first 2000 summaries

Database :

SPTRMBL 23: \*  
1: sp\_archaea: \*  
2: sp\_bacteria: \*  
3: sp\_fungi: \*  
4: sp\_human: \*  
5: sp\_invertebrate: \*  
6: sp\_mammal: \*  
7: sp\_mhc: \*  
8: sp\_organelle: \*  
9: sp\_phage: \*  
10: sp\_plant: \*  
11: sp\_rodent: \*  
12: sp\_virus: \*  
13: sp\_vertebrate: \*  
14: sp\_unclassified: \*  
15: sp\_virus: \*  
16: sp\_bacteriaph: \*  
17: sp\_archaeap: \*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result	Query	Score	Match	Length	ID	Description
No.						

No matches found

Search completed: February 23, 2004, 11:44:17  
Job time : 27.6667 secs



GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:40:23; Search time 12.6667 Seconds  
(without alignments)  
23.382 Million cell updates/sec

Title: US-09-989-994-395

Sequence: 1 DRSNLTTR 7

Scoring table: BLOSUM62  
Gapop 10.0, Gapext 0.5

Searched: 328717 seqs, 42310858 residues

Total number of hits satisfying chosen parameters: 3

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%  
Maximum Match 100%

Listing first 200 summaries

Database:

Issued Patents AA:\*  
1: /cgn2\_6/prodata/1/1aa/5A.COMB.pep:\*  
2: /cgn2\_6/prodata/1/1aa/5B.COMB.pep:\*  
3: /cgn2\_6/prodata/1/1aa/6A.COMB.pep:\*  
4: /cgn2\_6/prodata/1/1aa/6B.COMB.pep:\*  
5: /cgn2\_6/prodata/1/1aa/6C.COMB.pep:\*  
6: /cgn2\_6/prodata/1/1aa/6D.COMB.pep:\*

Pred. No. is the number of results predicted by chance to have a  
score greater than or equal to the score of the result being printed,  
and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	35	100.0	7	US-09-731-558-20	Sequence 20, Appl
2	35	100.0	89	US-08-793-408-18	Sequence 18, Appl
3	35	100.0	89	US-09-139-762A-18	Sequence 18, Appl

#### ALIGNMENTS

RESULT 1  
US-09-731-558-20  
Sequence 20, Application US/09731558  
Patent No. 6503717  
GENERAL INFORMATION:  
APPLICANT: Case, Casey Christopher  
APPLICANT: Liu, Qiang  
APPLICANT: Rebar, Edward J.  
APPLICANT: Sangamo Biosciences, Inc.  
TITLE OF INVENTION: Methods for using Randomized libraries of Zinc Finger  
FILE REFERENCE: 019496-003210US  
CURRENT APPLICATION NUMBER: US/09/731,558  
PRIORITY FILING DATE: 2000-12-06  
PRIORITY FILING DATE: 1999-12-06  
NUMBER OF SEQ ID NOS: 24  
SOFTWARE: PatentIn Ver. 2.1  
SEQ ID NO 20

LENGTH: 7  
TYPE: PRT  
ORGANISM: Artificial Sequence  
FEATURE:  
OTHER INFORMATION: Description of Artificial Sequence: SB89  
US-09-731-558-20

Query Match 100.0%; Score 35; DB 4; Length 7;  
Best Local Similarity 100.0%; Pred. No. 2.5e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7  
DB 1 DRSNLTTR 7

#### RESULT 2

US-08-793-408-18  
Sequence 18, Application US/08793408  
Patent No. 6007988  
GENERAL INFORMATION:

APPLICANT: Choo, Yen  
APPLICANT: King, Aaron  
APPLICANT: Sanchez Garcia, Isidro  
TITLE OF INVENTION: Improvements in or Relating to  
NUMBER OF SEQUENCES: 18  
CORRESPONDENCE ADDRESS:  
ADDRESS: Pillsbury Madison & Sutro, L.L.P.  
STREET: 1100 New York Avenue, N.W.  
CITY: Washington  
STATE: D.C.  
COUNTRY: USA  
ZIP: 20005-3918

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Word Perfect  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/793,408  
FILING DATE:

CLASSIFICATION: 435  
PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/GB95/01949  
FILING DATE: 17-AUG-1995

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: GB 9514698.1  
FILING DATE: 18-JUL-1995

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: GB 9422534.5  
FILING DATE: 08-NOV-1994

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: GB 9416880.4  
FILING DATE: 20-AUG-1994

INFORMATION FOR SEQ ID NO: 18:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 89 amino acids  
TYPE: amino acid  
STRANDEDNESS:

TOPOLOGY: unknown  
MOLECULE TYPE: protein  
US-08-793-408-18

Query Match 100.0%; Score 35; DB 3; Length 89;  
Best Local Similarity 100.0%; Pred. No. 0.98;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7  
DB 74 DRSNLTTR 80

```
RESULT 3
US-09-139-762A-18
; Sequence 18, Application US/09139762A
; Patent No. 6013453
; GENERAL INFORMATION:
; APPLICANT: Choo, Yen
; APPLICANT: Kluug, Aaron
; APPLICANT: Sanchez Garcia, Isidro
; TITLE OF INVENTION: Improvements in or Relating to
; TITLE OF INVENTION: Binding Proteins for Recognition of DNA
; NUMBER OF SEQUENCES: 125
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pillsbury Madison & Sutor, L.L.P.
; STREET: 1100 New York Avenue, N.W.
; CITY: Washington
; STATE: D.C.
; COUNTRY: USA
; ZIP: 20005-3918
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Diskette
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Word Perfect
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/139,762A
; FILING DATE:
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/793,408
; FILING DATE: 02-JUN-1997
; APPLICATION NUMBER: PCT/GB95/01949
; FILING DATE: 17-AUG-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: GB 9514698.1
; FILING DATE: 18-JUL-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: GB 9422534.9
; FILING DATE: 08-NOV-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: GB 9416880.4
; FILING DATE: 20-AUG-1994
; INFORMATION FOR SEQ ID NO: 18:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 89 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: unknown
; MOLECULE TYPE: protein
; US-09-139-762A-18

Query Match 100.0%; Score 35; DB 3; Length 89;
Best Local Similarity 100.0%; Pred. No. 0.98;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTJR 7
DB 74 DRSNLTJR 80
```

Search completed: February 23, 2004, 11:45:56  
Job time : 12.6667 secs



```

PR 06-DEC-1999; 59US-0456100.
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
XX
XX Case CC, Liu Q, Rebar EJ;
XX
XX WPI; 2001-374953/39.
XX
XX Identifying genes associated with selected phenotype for research
XX purposes, involves culturing cells transduced with nucleic acid
XX encoding zinc finger proteins and assaying cells exhibiting selected
XX phenotype
XX
XX Example 1; Page 36; 58pp; English.
XX
XX The specification describes a method for identifying genes associated
XX with a selected phenotype. The method involves providing a library of
XX nucleotide sequences encoding partially randomized zinc finger proteins,
XX transducing cells with expression vectors, each comprising a sequence
XX from the library, culturing the cells for expressing the zinc finger
XX protein, assaying the cells for selected phenotype, and identifying the
XX gene of interest, in cells exhibiting the phenotype. The method is useful
XX for identifying a gene or genes associated with a selected phenotype such
XX as the one related to cancer, nephritis, prostate hypertrophy,
XX hematompolesia, osteoporosis, obesity, cardiovascular disease or diabetes.
XX The method is useful in academic laboratories, in the biotechnological
XX industries, and in pharmaceutical, genomic, agricultural and chemical
XX companies. ABB84233-44 represent recognition helices of zinc finger
XX proteins, which recognise different DNA triplets.
XX
XX Sequence 7 AA;
XX
XX Query Match 100.0%; Score 35; DB 22; Length 7;
XX Best Local Similarity 100.0%; Pred. No. 9.3e+05;
XX Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX 1 DRSNLTNR 7
XX 1 DRSNLTNR 7
XX
XX Db
XX
XX RESULT 2
XX AAO22230
XX ID AAO22230 standard; Peptide; 7 AA.
XX
XX AAO22230;
XX
XX 11-OCT-2002 (first entry)
XX
XX Zinc finger protein #1 F2 peptide SEQ ID No 41.
XX
XX Non-canonical zinc finger binding protein; ZFP; gene therapy.
XX
XX Arabidopsis thaliana.
XX
XX WO200257293-A2.
XX
XX 25-JUL-2002.
XX
XX 22-JAN-2002; 2002WO-US01893.
XX
XX 22-JAN-2001; 2001US-263445P.
XX
XX 11-MAY-2001; 2001US-290716P.
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
XX
XX Rebar E, Jamieson A;
XX
XX WPI; 2002-566791/60.
XX
XX Non-canonical zinc finger binding protein for modulating gene
XX expression comprises non-canonical zinc finger components that bind to
XX a target sequence -

```

```

XX
XX Example 7; Page 51; 63pp; English.
XX
XX The invention relates to an isolated, non-canonical (e.g., non-C2H2) zinc
XX finger binding protein (ZFP) comprising one or more non-canonical zinc
XX finger components that bind to a target sequence. A fusion polypeptide of
XX the invention is useful for modulating expression of a gene. The non-
XX canonical ZFP and its encoding polynucleotide and a fusion protein
XX comprising the non-canonical ZFP and its encoding polynucleotide can be
XX used to treat disease. The non-canonical ZFP can be used in diagnostic
XX assays and to link phenotype to expression of particular genes. The
XX polynucleotide encoding the non-canonical ZFP can be used to treat
XX disorders by gene therapy. This sequence represents a peptide relating to
XX the zinc finger binding protein of the invention.
XX
XX Sequence 7 AA;
XX
XX Query Match 100.0%; Score 35; DB 23; Length 7;
XX Best Local Similarity 100.0%; Pred. No. 9.3e+05;
XX Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX 1 DRSNLTNR 7
XX 1 DRSNLTNR 7
XX
XX Db
XX
XX RESULT 3
XX ABB83564
XX ID ABB83564 standard; peptide; 7 AA.
XX
XX ABB83564;
XX
XX 27-SEP-2002 (first entry)
XX
XX F2 zinc finger for target sequence ZFP 1.
XX
XX Zinc finger; stress tolerance; pathogen resistance;
XX agrochemical.
XX
XX Unidentified.
XX
XX WO200257294-A2.
XX
XX 25-JUL-2002.
XX
XX 22-JAN-2002; 2002WO-US01906.
XX
XX 22-JAN-2001; 2001US-263445P.
XX
XX 11-MAY-2001; 2001US-290716P.
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
XX
XX Jamieson A, Li G;
XX
XX WPI; 2002-566792/60.
XX
XX Modified plant zinc finger protein for modulating gene expression in a
XX plant cell comprises zinc fingers that bind to a target site -
XX
XX Example 4; Page 42; 50pp; English.
XX
XX The present invention relates to a modified plant zinc finger
XX protein. This zinc finger protein is used to modulated gene
XX expression in a plant cell. Nucleic acid encoding the zinc finger is
XX expressed in plant cells to produce a plant with an altered phenotype
XX relative to the wild-type plant. The altered phenotype is high in
XX nutritional value, yield, stress tolerance, pathogen resistance,
XX resistance to agrochemicals, production of pharmaceutical compounds or
XX production of industrial chemicals. The present sequence is
XX a zinc finger protein sequence that is attracted to a ZFP target
XX sequence.
XX
XX Sequence 7 AA;

```

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTNR 7  
 1 DRSNLTNR 7

RESULT 4  
 ABJ03793  
 ID ABJ03793 standard; Peptide; 7 AA.

AC ABJ03793;  
 DT 25-SEP-2002 (first entry)  
 XX Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 36.

XX Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;  
 XX diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;  
 KM gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnary;  
 KM antitumor; cytostatic; antiproliferative; antidiabetic; ophthalmological;  
 XX osteopathic; antinfertility.

XX Homo sapiens.

XX WO200246412-A2.

XX 13-JUN-2002.

XX 06-DEC-2001; 2001WO-0846861.

XX 07-DEC-2000; 2000US-0733604.

XX 12-DEC-2000; 2000US-0736083.

XX 30-APR-2001; 2001US-0846033.

XX (SANG-) SANGMO BIOSCIENCES INC.

XX Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;  
 PI Jarvis E;

XX WPI; 2002-527918/56.

XX New zinc finger protein that binds to target site in vascular  
 PT endothelial growth factor gene, useful for modulating expression of the  
 PT gene and for treating atherosclerosis, ischemia, arthritis, wound or  
 PT ulcer

XX Claim 4; Page 102; 195pp; English.

XX The present invention relates to a zinc finger protein that binds to a  
 CC target site in one or more vascular endothelial growth factor (VEGF)  
 CC genes. The protein is useful for modulating expression of a VEGF gene,  
 CC thereby regulating angiogenesis and vasculogenesis. This can be used to  
 CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,  
 CC diabetic retinopathy or psoriasis. The present sequence is a peptide  
 CC shown in the invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTNR 7  
 1 DRSNLTNR 7

RESULT 5  
 ABJ03812

ID ABJ03812 standard; Peptide; 7 AA.

XX ABJ03812;

XX 25-SEP-2002 (first entry)

XX Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 55.

XX Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;  
 XX diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;  
 KM gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnary;  
 KM antitumor; cytostatic; antiproliferative; antidiabetic; ophthalmological;  
 XX osteopathic; antinfertility.

XX Homo sapiens.

XX WO200246412-A2.

XX 13-JUN-2002.

XX 06-DEC-2001; 2001WO-0846861.

XX 07-DEC-2000; 2000US-0733604.

XX 12-DEC-2000; 2000US-0736083.

XX 30-APR-2001; 2001US-0846033.

XX (SANG-) SANGMO BIOSCIENCES INC.

XX Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;  
 PI Jarvis E;

XX WPI; 2002-527918/56.

XX New zinc finger protein that binds to target site in vascular  
 PT endothelial growth factor gene, useful for modulating expression of the  
 PT gene and for treating atherosclerosis, ischemia, arthritis, wound or  
 PT ulcer

XX Claim 4; Page 103; 195pp; English.

XX The present invention relates to a zinc finger protein that binds to a  
 CC target site in one or more vascular endothelial growth factor (VEGF)  
 CC genes. The protein is useful for modulating expression of a VEGF gene,  
 CC thereby regulating angiogenesis and vasculogenesis. This can be used to  
 CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,  
 CC diabetic retinopathy or psoriasis. The present sequence is a peptide  
 CC shown in the invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTNR 7  
 1 DRSNLTNR 7

RESULT 6  
 ABJ03813  
 ID ABJ03813 standard; Peptide; 7 AA.

XX ABJ03813;

XX 25-SEP-2002 (first entry)

XX Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 56.

XX Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;  
 XX diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;  
 KM gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnary;  
 KM antitumor; cytostatic; antiproliferative; antidiabetic; ophthalmological;

KW osteopathic; antifertility.  
XX  
OS Homo sapiens.  
XX WO200246412-A2.  
XX  
XX  
XX 13-JUN-2002.  
XX  
XX  
XX 06-DEC-2001; 2001WO-US46861.  
XX  
XX 07-DEC-2000; 2000US-0733604.  
XX 12-DEC-2000; 2000US-0736083.  
XX 30-APR-2001; 2001US-0846033.  
XX  
XX (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
XX Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP,  
XX Jarvis E;  
XX WPI; 2002-527918/56.  
XX  
XX New zinc finger protein that binds to target site in vascular  
XX endothelial growth factor gene, useful for modulating expression of the  
XX gene and for treating atherosclerosis, ischemia, arthritis, wound or  
XX ulcer -  
XX  
XX Claim 4; Page 103; 195pp; English.  
XX  
XX The present invention relates to a zinc finger protein that binds to a  
XX target site in one or more vascular endothelial growth factor (VEGF)  
XX genes. The protein is useful for modulating expression of a VEGF gene,  
XX thereby regulating angiogenesis and vasculogenesis. This can be used to  
XX treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumours,  
XX diabetic retinopathy or psoriasis. The present sequence is a peptide  
XX shown in the invention.  
XX  
SQ Sequence 7 AA;  
  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 1 DRSNLTTR 7  
DB 1 DRSNLTTR 7  
  
RESULT 7  
ABJ03816  
ID ABJ03816 standard; Peptide; 7 AA.  
XX  
XX AC ABJ03816;  
XX  
XX  
XX 25-SEP-2002 (first entry)  
XX  
XX Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 59.  
XX  
XX zinc finger protein; angiogenesis; vasculogenesis; ischemia;  
XX diabetic retinopathy; psoriasis; arthropathy; cancer; tumor growth;  
XX gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnary;  
XX antitumor; cytosolic; antipsoriatic; antidiabetic; ophthalmological;  
XX osteopathic; antifertility.  
XX  
XX Homo sapiens.  
XX  
XX WO200246412-A2.  
XX  
XX 13-JUN-2002.  
XX  
XX 06-DEC-2001; 2001WO-US46861.  
XX  
XX 07-DEC-2000; 2000US-0733604.  
XX 12-DEC-2000; 2000US-0736083.  
XX 30-APR-2001; 2000US-0736083.

PR 30-APR-2001; 2001US-0846033.  
XX  
XX (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
XX Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP,  
XX Jarvis E;  
XX WPI; 2002-527918/56.  
XX  
XX New zinc finger protein that binds to target site in vascular  
XX endothelial growth factor gene, useful for modulating expression of the  
XX gene and for treating atherosclerosis, ischemia, arthritis, wound or  
XX ulcer -  
XX  
XX Claim 4; Page 102; 195pp; English.  
XX  
XX The present invention relates to a zinc finger protein that binds to a  
XX target site in one or more vascular endothelial growth factor (VEGF)  
XX genes. The protein is useful for modulating expression of a VEGF gene,  
XX thereby regulating angiogenesis and vasculogenesis. This can be used to  
XX treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumours,  
XX diabetic retinopathy or psoriasis. The present sequence is a peptide  
XX shown in the invention.  
XX  
SQ Sequence 7 AA;  
  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 1 DRSNLTTR 7  
DB 1 DRSNLTTR 7  
  
RESULT 8  
ABJ03824  
ID ABJ03824 standard; Peptide; 7 AA.  
XX  
XX AC ABJ03824;  
XX  
XX  
XX 25-SEP-2002 (first entry)  
XX  
XX Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 67.  
XX  
XX zinc finger protein; angiogenesis; vasculogenesis; ischemia;  
XX diabetic retinopathy; psoriasis; arthropathy; cancer; tumor growth;  
XX gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnary;  
XX antitumor; cytosolic; antipsoriatic; antidiabetic; ophthalmological;  
XX osteopathic; antifertility.  
XX  
XX Homo sapiens.  
XX  
XX WO200246412-A2.  
XX  
XX 13-JUN-2002.  
XX  
XX 06-DEC-2001; 2001WO-US46861.  
XX  
XX 07-DEC-2000; 2000US-0733604.  
XX 12-DEC-2000; 2000US-0736083.  
XX 30-APR-2001; 2001US-0846033.  
XX  
XX (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
XX Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP,  
XX Jarvis E;  
XX WPI; 2002-527918/56.  
XX  
XX New zinc finger protein that binds to target site in vascular  
XX endothelial growth factor gene, useful for modulating expression of the  
XX gene and for treating atherosclerosis, ischemia, arthritis, wound or

PT ulcer -

XX Claim 4; Page 102; 195bp; English.

XX The present invention relates to a zinc finger protein that binds to a

CC target site in one or more vascular endothelial growth factor (VEGF)

CC genes. The protein is useful for modulating expression of a VEGF gene,

CC thereby regulating angiogenesis and vasculogenesis. This can be used to

CC treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumours,

CC diabetic retinopathy or psoriasis. The present sequence is a peptide

CC shown in the invention.

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7

DB 1 DRSNLTR 7

RESULT 9

ABU03888

ID ABU03888 standard; Peptide; 7 AA.

AC ABU03888;

XX

XX 25-SEP-2002 (first entry)

DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 134.

XX

XX Zinc finger protein; angiogenesis; vasculogenesis; ischemia;

KM diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;

KM gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;

KM anticulcer; cyostatic; antipsoriatic; antidiabetic; ophthalmological;

KM osteopathic; antiinfertility.

OS Homo sapiens.

XX

XX WO200246412-A2.

PN

PD 13-JUN-2002.

XX

XX 06-DEC-2001; 2001WO-US46861.

PF

XX 07-DEC-2000; 2000US-073604.

PR 12-DEC-2000; 2000US-0736083.

PR 30-APR-2001; 2001US-0846033.

XX

XX (SANG-) SANGAMO BIOSCIENCES INC.

XX

XX Rebar E, Jamieson A, Liu Q, Wolfe A, Eisenberg SP;

PI Jarvis E;

XX

XX WPI; 2002-527918/56.

DR

XX

PT New zinc finger protein that binds to target site in vascular

PT endothelial growth factor gene; useful for modulating expression of the

PT gene and for treating atherosclerosis, ischemia, arthritis, wound or

PT ulcer -

XX

XX Claim 6; Page 103; 195bp; English.

XX

XX The present invention relates to a zinc finger protein that binds to a

CC target site in one or more vascular endothelial growth factor (VEGF)

CC genes. The protein is useful for modulating expression of a VEGF gene,

CC thereby regulating angiogenesis and vasculogenesis. This can be used to

CC treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumours,

CC diabetic retinopathy or psoriasis. The present sequence is a peptide

CC shown in the invention.

XX

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7

DB 1 DRSNLTR 7

RESULT 10

ABU03910

ID ABU03910 standard; Peptide; 7 AA.

AC ABU03910;

XX

XX 25-SEP-2002 (first entry)

DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 167.

XX

XX Zinc finger protein; angiogenesis; vasculogenesis; ischemia;

KM diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;

KM gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;

KM anticulcer; cyostatic; antipsoriatic; antidiabetic; ophthalmological;

KM osteopathic; antiinfertility.

OS Homo sapiens.

XX

XX WO200246412-A2.

PN

PD 13-JUN-2002.

XX

XX 06-DEC-2001; 2001WO-US46861.

PF

XX 07-DEC-2000; 2000US-073604.

PR 12-DEC-2000; 2000US-0736083.

PR 30-APR-2001; 2001US-0846033.

XX

XX (SANG-) SANGAMO BIOSCIENCES INC.

XX

XX Rebar E, Jamieson A, Liu Q, Wolfe A, Eisenberg SP;

PI Jarvis E;

XX

XX WPI; 2002-527918/56.

DR

XX

PT New zinc finger protein that binds to target site in vascular

PT endothelial growth factor gene; useful for modulating expression of the

PT gene and for treating atherosclerosis, ischemia, arthritis, wound or

PT ulcer -

XX

XX Example 1; Page 104; 195bp; English.

XX

XX The present invention relates to a zinc finger protein that binds to a

CC target site in one or more vascular endothelial growth factor (VEGF)

CC genes. The protein is useful for modulating expression of a VEGF gene,

CC thereby regulating angiogenesis and vasculogenesis. This can be used to

CC treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumours,

CC diabetic retinopathy or psoriasis. The present sequence is a peptide

CC shown in the invention.

XX

XX Sequence 7 AA;

SQ

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7

DB 1 DRSNLTR 7

RESULT 11

ABU03913  
ID ABU03913 standard; Peptide; 7 AA.  
XX  
AC ABU03913;  
XX  
DT 25-SEP-2002 (first entry)  
XX  
DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 170.  
XX  
KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;  
KM diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;  
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;  
KM anticulcer; cytosatic; antipsoriatic; antidiabetic; ophthalmological;  
XX osteopathic; antiinfertility.  
XX  
OS Homo sapiens.  
XX  
PN WO200246412-A2.  
XX  
PD 13-JUN-2002.  
XX  
PF 06-DEC-2001; 2001WO-US46861.  
XX  
PR 07-DEC-2000; 2000US-0733604.  
PR 12-DEC-2000; 2000US-0736083.  
PR 30-APR-2001; 2001US-0846033.  
XX  
PA (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;  
PI Jarvis E;  
XX  
DR WPI; 2002-527918/56.  
XX  
PT New zinc finger protein that binds to target site in vascular  
PT endothelial growth factor gene, useful for modulating expression of the  
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or  
PT ulcer -  
XX  
PS Example 1; Page 104; 195pp; English.  
XX  
CC The present invention relates to a zinc finger protein that binds to a  
CC target site in one or more vascular endothelial growth factor (VEGF)  
CC genes. The protein is useful for modulating expression of a VEGF gene,  
CC thereby regulating angiogenesis and vasculogenesis. This can be used to  
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,  
CC diabetic retinopathy or psoriasis. The present sequence is a peptide  
CC shown in the invention.  
XX  
SQ Sequence 7 AA;  
XX  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
XX  
QY 1 DRSNLTTR 7  
DB 1 DRSNLTTR 7  
XX  
RESULT 12  
ABU03935  
ID ABU03935 standard; Peptide; 7 AA.  
XX  
AC ABU03935;  
XX  
DT 25-SEP-2002 (first entry)  
XX  
DE Rat VEGF-targeted zinc finger protein fragment SEQ ID NO: 196.  
XX  
KW zinc finger protein; angiogenesis; vasculogenesis; ischaemia;  
KM diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;  
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;

KW anticulcer; cytosatic; antipsoriatic; antidiabetic; ophthalmological;  
KM osteopathic; antiinfertility.  
XX  
OS Rattus sp.  
XX  
PN WO200246412-A2.  
XX  
PD 13-JUN-2002.  
XX  
PF 06-DEC-2001; 2001WO-US46861.  
XX  
PR 07-DEC-2000; 2000US-0733604.  
PR 12-DEC-2000; 2000US-0736083.  
PR 30-APR-2001; 2001US-0846033.  
XX  
PA (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;  
PI Jarvis E;  
XX  
DR WPI; 2002-527918/56.  
XX  
PT New zinc finger protein that binds to target site in vascular  
PT endothelial growth factor gene, useful for modulating expression of the  
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or  
PT ulcer -  
XX  
PS Disclosure; Page 105; 195pp; English.  
XX  
CC The present invention relates to a zinc finger protein that binds to a  
CC target site in one or more vascular endothelial growth factor (VEGF)  
CC genes. The protein is useful for modulating expression of a VEGF gene,  
CC thereby regulating angiogenesis and vasculogenesis. This can be used to  
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,  
CC diabetic retinopathy or psoriasis. The present sequence is a peptide  
CC shown in the invention.  
XX  
SQ Sequence 7 AA;  
XX  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
XX  
QY 1 DRSNLTTR 7  
DB 1 DRSNLTTR 7  
XX  
RESULT 13  
ABU03937  
ID ABU03937 standard; Peptide; 7 AA.  
XX  
AC ABU03937;  
XX  
DT 25-SEP-2002 (first entry)  
XX  
DE Rat VEGF-targeted zinc finger protein fragment SEQ ID NO: 198.  
XX  
KW zinc finger protein; angiogenesis; vasculogenesis; ischaemia;  
KM diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;  
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;  
KM anticulcer; cytosatic; antipsoriatic; antidiabetic; ophthalmological;  
XX osteopathic; antiinfertility.  
XX  
OS Rattus sp.  
XX  
PN WO200246412-A2.  
XX  
PD 13-JUN-2002.  
XX  
PF 06-DEC-2001; 2001WO-US46861.  
PF 12-DEC-2000; 2000US-0733604.  
PR 07-DEC-2000; 2000US-0733604.



PR 12-DEC-2000; 2000US-0736083.  
PR 30-APR-2001; 2001US-0846033.  
XX  
PA (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP;  
PI Jarvis E;  
XX  
DR WPI; 2002-527918/56.  
XX  
PT New zinc finger protein that binds to target site in vascular  
PT endothelial growth factor gene, useful for modulating expression of the  
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or  
PT ulcer  
XX  
PS Disclosure; Page 105; 195pp; English.  
XX  
CC The present invention relates to a zinc finger protein that binds to a  
CC target site in one or more vascular endothelial growth factor (VEGF)  
CC genes. The protein is useful for modulating expression of a VEGF gene,  
CC thereby regulating angiogenesis and vasculogenesis. This can be used to  
CC treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumors,  
CC diabetic retinopathy or psoriasis. The present sequence is a peptide  
CC shown in the invention.  
XX  
SQ Sequence 7 AA;  
XX  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
CY 1 DRSNLTNR 7  
DB 1 DRSNLTNR 7  
XX  
RESULT 14  
ABB80798  
ID ABB80798 standard; peptide; 7 AA.  
XX  
AC ABB80798;  
XX  
DT 23-SEP-2002 (first entry)  
XX  
DE Human ER-alpha locus targeting ZFP1 peptide #8.  
XX  
KW ZFP; cytostatic; antidiabetic; ophthalmological; vasotropic; chromatin;  
KW gene expression; antineumatic; antiarthritic; antipsoriatic; noctropic;  
KW neuroprotective; cerebroprotective; estrogen receptor alpha; ER-alpha;  
KW zinc finger protein.  
XX  
OS Synthetic.  
XX  
PN WO200244386-A2.  
XX  
PD 06-JUN-2002.  
XX  
PF 30-NOV-2001; 2001WO-US45098.  
XX  
PR 01-DEC-2000; 2000US-250804P.  
XX  
PA (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
PI Wolfe AP, Tse C, Collingwood T;  
PI WPI; 2002-537455/57.  
XX  
DR  
XX  
PT Regulating expression of gene by contacting cell with regulatory  
PT molecule comprising DNA-binding domain targeted to sequence within  
PT accessible region of cellular chromatin associated with a gene, and  
PT functional domain  
XX  
PS Example 1; Page 44; 64pp; English.

XX  
CC The invention relates to regulating the expression of a gene residing in  
CC the chromatin of a cell. The method involves identifying one or more  
CC accessible regions in cellular chromatin associated with gene; designing  
CC a regulatory molecule, where the regulatory molecule comprises a DNA-  
CC binding domain targeted to a sequence within the accessible region, and a  
CC functional domain; and contacting the regulatory molecule with the cell.  
CC The method is used for regulating the expression of a gene (e.g., a gene  
CC encoding a nuclear receptor such as estrogen receptor alpha (ERalpha),  
CC estrogen receptor beta (ERbeta), hepatocyte nuclear factor 4 alpha  
CC (HNF4alpha), hepatocyte nuclear factor 4 gamma (HNF4gamma), peroxisome  
CC proliferator activated receptor gamma (PPARgamma), retinoid X receptor  
CC alpha (RXRalpha), or constitutively active receptor alpha (CARalpha))  
CC residing in the chromatin of a cell. Regulation of gene expression (such  
CC as nuclear receptor genes) will be useful in treatment of various  
CC diseases, including cancer, diabetes and cardiovascular disease, where  
CC the regulatory molecule as described above, is contacted with the cell to  
CC carry out the regulation. The method is also useful for modulation of  
CC gene expression for therapeutic or prophylactic applications e.g.,  
CC diabetic retinopathy, ischemia, macular degeneration, rheumatoid  
CC arthritis, psoriasis, HIV infection, sickle cell anemia, Alzheimer's  
CC disease, stroke, etc. The method also has applications in pharmaceutical  
CC research of both nuclear receptors of known function as well as those of  
CC unknown function. The method also facilitates development of tissue and  
CC animal models of disease states, drug validation, and therapeutic product  
CC development. The methods also allow identification of the role of nuclear  
CC receptors of unknown functions in cellular homeostasis. Sequences  
CC ABB80791-817 represent zinc finger protein (ZFP) DNA-binding domains that  
CC were fused to functional domains and tested for their ability to regulate  
CC expression of the ER in living cells.  
XX  
SQ Sequence 7 AA;  
XX  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
CY 1 DRSNLTNR 7  
DB 1 DRSNLTNR 7  
XX  
RESULT 15  
ABB80812  
ID ABB80812 standard; peptide; 7 AA.  
XX  
AC ABB80812;  
XX  
DT 23-SEP-2002 (first entry)  
XX  
DE Human ER-alpha locus targeting ZFP3 peptide #4.  
XX  
KW ZFP; cytostatic; antidiabetic; ophthalmological; vasotropic; chromatin;  
KW gene expression; antineumatic; antiarthritic; antipsoriatic; noctropic;  
KW neuroprotective; cerebroprotective; estrogen receptor alpha; ER-alpha;  
KW zinc finger protein.  
XX  
OS Synthetic.  
XX  
PN WO200244386-A2.  
XX  
PD 06-JUN-2002.  
XX  
PF 30-NOV-2001; 2001WO-US45098.  
XX  
PR 01-DEC-2000; 2000US-250804P.  
XX  
PA (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
PI Wolfe AP, Tse C, Collingwood T;  
PI WPI; 2002-537455/57.  
XX  
DR  
XX

PT Regulating expression of gene by contacting cell with regulatory  
PT molecule comprising DNA-binding domain targeted to sequence within  
PT accessible region of cellular chromatin associated with a gene, and  
PT functional domain -

PS Example 1; Page 44; 64pp; English.

XX The invention relates to regulating the expression of a gene residing in  
CC the chromatin of a cell. The method involves identifying one or more  
CC accessible regions in cellular chromatin associated with gene; designing  
CC a regulatory molecule, where the regulatory molecule comprises a DNA-  
CC binding domain targeted to a sequence within the accessible region, and a  
CC functional domain; and contacting the regulatory molecule with the cell.  
CC The method is used for regulating the expression of a gene (e.g., a gene  
CC encoding a nuclear receptor such as estrogen receptor alpha (ERalpha),  
CC estrogen receptor beta (ERbeta), hepatocyte nuclear factor 4 alpha  
CC (HNF4alpha), hepatocyte nuclear factor 4 gamma (HNF4gamma), peroxisome  
CC proliferator activated receptor gamma (PPARGgamma), retinoid X receptor  
CC alpha (RXRalpha), or constitutively active receptor alpha (CARalpha))  
CC residing in the chromatin of a cell. Regulation of gene expression (such  
CC as nuclear receptor genes) will be useful in treatment of various  
CC diseases, including cancer, diabetes and cardiovascular disease, where  
CC the regulatory molecule as described above, is contacted with the cell to  
CC carry out the regulation. The method is also useful for modulation of  
CC gene expression for therapeutic or prophylactic applications e.g.,  
CC diabetic retinopathy, ischemia, macular degeneration, rheumatoid  
CC arthritis, psoriasis, HIV infection, sickle cell anemia, Alzheimer's  
CC disease, stroke, etc. The method also has applications in pharmaceutical  
CC research of both nuclear receptors of known function as well as those of  
CC unknown function. The method also facilitates development of tissue and  
CC animal models of disease states, drug validation, and therapeutic product  
CC development. The method also allow identification of the role of nuclear  
CC receptors of unknown functions in cellular homeostasis. Sequences  
CC AB80791-817 represent zinc finger protein (ZFP) DNA-binding domains that  
CC were fused to functional domains and tested for their ability to regulate  
CC expression of the ER in living cells.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
DB 1 DRSNLTR 7

RESULT 16

ABP48386 standard; Peptide; 7 AA.

AC ABP48386;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:395.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -

PS Example 1; Page 37; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (I) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP4191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
DB 1 DRSNLTR 7

RESULT 17

ABP49157 standard; Peptide; 7 AA.

AC ABP49157;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:1525.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

Liu Q;

DR WPI; 2002-500284/53.

XX New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -  
XX  
XX Claim 1; Page 47; 81pp; English.  
XX  
XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.  
XX  
XX Sequence 7 AA;  
SQ  
XX  
XX Query Match 100.0%; Score 35; DB 23; Length 7;  
XX Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
XX Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
XX  
XX 1 DRSNLTTR 7  
XX |||||  
XX 1 DRSNLTTR 7  
XX  
XX  
XX RESULT 18  
XX ABP49201 standard; Peptide; 7 AA.  
XX  
XX AC ABP49201;  
XX  
XX DT 28-AUG-2002 (first entry)  
XX  
XX DE Zinc finger protein related peptide motif SEQ ID NO:1454.  
XX  
XX KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
XX  
XX OS Homo sapiens.  
XX  
XX OS Synthetic.  
XX  
XX PN WO200242459-A2.  
XX  
XX PN 30-MAY-2002.  
XX  
XX PD 20-NOV-2001; 2001MO-US43438.  
XX  
XX PR 20-NOV-2000; 2000US-0716637.  
XX  
XX PA (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
XX PI Liu Q;  
XX  
XX PI WPI; 2002-500284/53.  
XX  
XX DR New zinc finger protein that binds to target site, useful in studying  
XX PT gene function and for human therapeutics and plant engineering,  
XX PT comprises first, second and third zinc fingers, ordered from N- to

PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -  
XX  
XX Example 1; Page 47; 81pp; English.  
XX  
XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.  
XX  
XX Sequence 7 AA;  
SQ  
XX  
XX Query Match 100.0%; Score 35; DB 23; Length 7;  
XX Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
XX Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
XX  
XX 1 DRSNLTTR 7  
XX |||||  
XX 1 DRSNLTTR 7  
XX  
XX  
XX RESULT 19  
XX ABP49224 standard; Peptide; 7 AA.  
XX  
XX AC ABP49224;  
XX  
XX DT 28-AUG-2002 (first entry)  
XX  
XX DE Zinc finger protein related peptide motif SEQ ID NO:1376.  
XX  
XX KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
XX  
XX OS Homo sapiens.  
XX  
XX OS Synthetic.  
XX  
XX PN WO200242459-A2.  
XX  
XX PN 30-MAY-2002.  
XX  
XX PD 20-NOV-2001; 2001MO-US43438.  
XX  
XX PR 20-NOV-2000; 2000US-0716637.  
XX  
XX PA (SANG-) SANGAMO BIOSCIENCES INC.  
XX  
XX PI Liu Q;  
XX  
XX PI WPI; 2002-500284/53.  
XX  
XX DR New zinc finger protein that binds to target site, useful in studying  
XX PT gene function and for human therapeutics and plant engineering,  
XX PT comprises first, second and third zinc fingers, ordered from N- to  
XX C-terminus -

PS Example 1; Page 48; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (i) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determined the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DRSNLTTR 7  
Db 1 DRSNLTTR 7

RESULT 20  
ABP49231  
ID ABP49231 standard; Peptide; 7 AA.

AC ABP49231;  
XX 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:1464.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN W0200242459-A2.

XX 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

XX New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -

PS Example 1; Page 48; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to

CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (i) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determined the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DRSNLTTR 7  
Db 1 DRSNLTTR 7

RESULT 21  
ABP49241  
ID ABP49241 standard; Peptide; 7 AA.

AC ABP49241;

XX 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:1553.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN W0200242459-A2.

XX 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

XX New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -

PS Example 1; Page 48; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),

CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
CC (I1) comprising (I1); (2) a polynucleotide (I1) encoding (I1) or (I1); and  
CC (3) designing (M) (I1) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I1)  
CC that binds to a target site. (I1) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I1) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I1), (I1) or (I1) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I1) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

Sequence 7 AA;  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
| | | | |  
Db 1 DRSNLTR 7

RESULT 22  
ID ABP49259 standard; Peptide; 7 AA.  
AC ABP49259;  
XX 28-AUG-2002 (first entry)  
XX Zinc finger protein related peptide motif SEQ ID NO:1559.  
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
XX Homo sapiens.  
XX Synthetic.  
XX MO200242459-A2.  
XX 30-MAY-2002.  
XX 20-NOV-2001; 2001MO-US43438.  
XX 20-NOV-2000; 2000US-0716637.  
XX (SANG-) SANGAMO BIOSCIENCES INC.  
XX Liu Q;  
XX WPI; 2002-500284/53.  
XX New zinc finger protein that binds to target site, useful in studying  
XX gene function and for human therapeutics and plant engineering,  
XX comprises first, second and third zinc fingers, ordered from N- to  
XX C-terminus -  
XX Example 1; Page 48; 81pp; English.  
XX The present invention describes a zinc finger protein (I1) that binds to  
XX a target site, comprising a first (F1), a second (F2), and a third (F3)  
XX zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
XX target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
XX and a third (S3) target sub-site. Also described are: (1) a polypeptide  
XX (I1) comprising (I1); (2) a polynucleotide (I1) encoding (I1) or (I1); and  
XX (3) designing (M) (I1) involves selecting the F1 zinc finger such that

CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I1)  
CC that binds to a target site. (I1) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I1) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I1), (I1) or (I1) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I1) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

Sequence 7 AA;  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
| | | | |  
Db 1 DRSNLTR 7

RESULT 23  
ID ABP49274 standard; Peptide; 7 AA.  
AC ABP49274;  
XX 28-AUG-2002 (first entry)  
XX Zinc finger protein related peptide motif SEQ ID NO:1564.  
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
XX Homo sapiens.  
XX Synthetic.  
XX MO200242459-A2.  
XX 30-MAY-2002.  
XX 20-NOV-2001; 2001MO-US43438.  
XX 20-NOV-2000; 2000US-0716637.  
XX (SANG-) SANGAMO BIOSCIENCES INC.  
XX Liu Q;  
XX WPI; 2002-500284/53.  
XX New zinc finger protein that binds to target site, useful in studying  
XX gene function and for human therapeutics and plant engineering,  
XX comprises first, second and third zinc fingers, ordered from N- to  
XX C-terminus -  
XX Example 1; Page 48; 81pp; English.  
XX The present invention describes a zinc finger protein (I1) that binds to  
XX a target site, comprising a first (F1), a second (F2), and a third (F3)  
XX zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
XX target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
XX and a third (S3) target sub-site. Also described are: (1) a polypeptide  
XX (I1) comprising (I1); (2) a polynucleotide (I1) encoding (I1) or (I1); and  
XX (3) designing (M) (I1) involves selecting the F1 zinc finger such that  
XX it binds to the S1 target sub-site, selecting the F2 zinc finger such  
XX that it binds to the S2 target sub-site, and selecting the F3 zinc  
XX finger such that it binds to the S3 target sub-site, thus designing (I1)

CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target sites having the nucleotide G in the 5'-most position of the  
 CC subunit. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7  
 |||||  
 Db 1 DRSNLTR 7

RESULT 24

ABP49313  
 ID ABP49313 standard; Peptide; 7 AA.

AC ABP49313;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:1577.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering, to  
 PT comprises first, second and third zinc fingers, ordered from N- to

PS C-terminus -

XX Example 1; Page 48; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target subunit. Also described are: (1) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target subunit, selecting the F2 zinc finger such  
 CC that it binds to the S2 target subunit, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target subunit, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target subunits having the nucleotide G in the 5'-most position of the  
 CC subunit. (I) is useful in studying gene function, and for human

CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7  
 |||||  
 Db 1 DRSNLTR 7

RESULT 25

ABP49666  
 ID ABP49666 standard; Peptide; 7 AA.

AC ABP49666;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:1899.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering, to  
 PT comprises first, second and third zinc fingers, ordered from N- to

PS C-terminus -

XX Example 1; Page 52; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target subunit. Also described are: (1) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target subunit, selecting the F2 zinc finger such  
 CC that it binds to the S2 target subunit, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target subunit, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target subunits having the nucleotide G in the 5'-most position of the  
 CC subunit. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of

target nucleic acid in a sample, and in assays to determine the  
phenotype and function of gene expression. (I) has improved affinity  
and specificity for their target sequences, as well as enhanced  
biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
represent DNA target sequences and zinc finger peptides which are given  
in the exemplification of the present invention.

Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7  
1 DRSNLTTR 7

RESULT 26  
ABP49769  
ID ABP49769 standard; Peptide; 7 AA.

AC ABP49769;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3535.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001MO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

New zinc finger protein that binds to target site, useful in studying  
gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
C-terminus -

Example 1; Page 54; 81bp; English.

The present invention describes a zinc finger protein (I) that binds to  
a target site, comprising a first (F1), a second (F2), and a third (F3)  
zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
and a third (S3) target subsequence. Also described are: (1) a polypeptide  
(II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
(3) designing (M) (I) involves selecting the F1 zinc finger such that  
it binds to the S1 target subsequence, selecting the F2 zinc finger such  
that it binds to the S2 target subsequence, and selecting the F3 zinc  
finger such that it binds to the S3 target subsequence, thus designing (I)  
that binds to a target site. (I) is useful for recognition of triplet  
target subsequence having the nucleotide G in the 5'-most position of the  
subsequence. (I) is useful in studying gene function, and for human  
therapeutic and plant engineering. (I), (II) or (III) is useful in  
therapeutic methods to modulate the expression of a target region within  
a subject, in diagnostic methods for sequence specific detection of  
target nucleic acid in a sample, and in assays to determine the  
phenotype and function of gene expression. (I) has improved affinity  
and specificity for their target sequences, as well as enhanced

biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
represent DNA target sequences and zinc finger peptides which are given  
in the exemplification of the present invention.

Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7  
1 DRSNLTTR 7

RESULT 27  
ABP49880  
ID ABP49880 standard; Peptide; 7 AA.

AC ABP49880;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3572.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001MO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

New zinc finger protein that binds to target site, useful in studying  
gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
C-terminus -

Example 1; Page 55; 81bp; English.

The present invention describes a zinc finger protein (I) that binds to  
a target site, comprising a first (F1), a second (F2), and a third (F3)  
zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
and a third (S3) target subsequence. Also described are: (1) a polypeptide  
(II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
(3) designing (M) (I) involves selecting the F1 zinc finger such that  
it binds to the S1 target subsequence, selecting the F2 zinc finger such  
that it binds to the S2 target subsequence, and selecting the F3 zinc  
finger such that it binds to the S3 target subsequence, thus designing (I)  
that binds to a target site. (I) is useful for recognition of triplet  
target subsequence having the nucleotide G in the 5'-most position of the  
subsequence. (I) is useful in studying gene function, and for human  
therapeutic and plant engineering. (I), (II) or (III) is useful in  
therapeutic methods to modulate the expression of a target region within  
a subject, in diagnostic methods for sequence specific detection of  
target nucleic acid in a sample, and in assays to determine the  
phenotype and function of gene expression. (I) has improved affinity  
and specificity for their target sequences, as well as enhanced  
biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
represent DNA target sequences and zinc finger peptides which are given  
in the exemplification of the present invention.

XX Sequence 7 AA; 100.0%; Score 35; DB 23; Length 7;  
 SQ Query Match Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
 1 DRSNLTR 7

Db 1 DRSNLTR 7

RESULT 28  
 ABP49958  
 ID ABP49958 standard; Peptide; 7 AA.  
 AC ABP49958;  
 XX 28-AUG-2002 (first entry)  
 DE Zinc finger protein related peptide motif SEQ ID NO:3598.  
 XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 XX Homo sapiens.  
 OS Synthetic.  
 PN WO200242459-A2.  
 XX 30-MAY-2002.  
 PD 20-NOV-2001; 2001MO-US43438.  
 XX 20-NOV-2001; 2001MO-US43438.  
 PF 20-NOV-2000; 2000US-0716637.  
 XX (SANG-) SANGAMO BIOSCIENCES INC.  
 PA Lian Q;  
 PI WPI; 2002-500284/53.  
 DR New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N- to  
 PT C-terminus -

XX Example 1; Page 55; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
 CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target sub-site, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target sub-sites having the nucleotide G in the 5'-most position of the  
 CC sub-site. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.

XX Sequence 7 AA;

XX Query Match Best Local Similarity 100.0%; Score 35; DB 23; Length 7;  
 SQ Query Match Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
 1 DRSNLTR 7

Db 1 DRSNLTR 7

RESULT 29  
 ABP49964  
 ID ABP49964 standard; Peptide; 7 AA.  
 AC ABP49964;  
 XX 28-AUG-2002 (first entry)  
 DE Zinc finger protein related peptide motif SEQ ID NO:3600.  
 XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 XX Homo sapiens.  
 OS Synthetic.  
 PN WO200242459-A2.  
 XX 30-MAY-2002.  
 PD 20-NOV-2001; 2001MO-US43438.  
 XX 20-NOV-2001; 2001MO-US43438.  
 PF 20-NOV-2000; 2000US-0716637.  
 XX (SANG-) SANGAMO BIOSCIENCES INC.  
 PA Lian Q;  
 PI WPI; 2002-500284/53.  
 DR New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N- to  
 PT C-terminus -

XX Example 1; Page 55; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
 CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target sub-site, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target sub-sites having the nucleotide G in the 5'-most position of the  
 CC sub-site. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214, and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.

XX Sequence 7 AA;





RESULT 32  
 ABP50166  
 ID ABP50166 standard; Peptide; 7 AA.  
 AC  
 XX  
 AC ABP50166;  
 XX  
 XX 28-AUG-2002 (first entry)  
 DT  
 XX  
 DE Zinc finger protein related peptide motif SEQ ID NO:2668.  
 XX  
 XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 KM  
 XX Homo sapiens.  
 OS  
 OS Synthetic.  
 XX  
 XX MO200242459-A2.  
 PN  
 XX  
 XX 30-MAY-2002.  
 PD  
 XX 20-NOV-2001; 2001MO-US43438.  
 PF  
 XX 20-NOV-2000; 2000US-0716637.  
 PR  
 XX  
 XX (SANG-) SANGAMO BIOSCIENCES INC.  
 PA  
 XX  
 XX Liu Q;  
 DR  
 XX WPI; 2002-500284/53.  
 XX  
 XX  
 XX New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N- to  
 PT C-terminus -  
 XX  
 XX Example 1; Page 57; 81pp; English.  
 PS  
 XX  
 CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
 CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target sub-site, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target sub-sites having the nucleotide G in the 5'-most position of the  
 CC sub-site. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.  
 CC  
 XX  
 SQ Sequence 7 AA;  
 Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 1 DRSNLTNR 7  
 Db 1 DRSNLTNR 7  
 RESULT 33  
 ABP50254  
 ID ABP50254 standard; Peptide; 7 AA.

XX  
 AC ABP50254;  
 XX  
 XX 28-AUG-2002 (first entry)  
 DT  
 XX  
 DE Zinc finger protein related peptide motif SEQ ID NO:3197.  
 XX  
 XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 KM  
 XX Homo sapiens.  
 OS  
 OS Synthetic.  
 XX  
 XX MO200242459-A2.  
 PN  
 XX  
 XX 30-MAY-2002.  
 PD  
 XX 20-NOV-2001; 2001MO-US43438.  
 PF  
 XX 20-NOV-2000; 2000US-0716637.  
 PR  
 XX  
 XX (SANG-) SANGAMO BIOSCIENCES INC.  
 PA  
 XX  
 XX Liu Q;  
 DR  
 XX WPI; 2002-500284/53.  
 XX  
 XX  
 XX New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N- to  
 PT C-terminus -  
 XX  
 XX Example 1; Page 57; 81pp; English.  
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 CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
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 CC finger such that it binds to the S3 target sub-site, thus designing (I)  
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 CC target sub-sites having the nucleotide G in the 5'-most position of the  
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 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.  
 CC  
 XX  
 SQ Sequence 7 AA;  
 Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 1 DRSNLTNR 7  
 Db 1 DRSNLTNR 7  
 RESULT 34  
 ABP50277  
 ID ABP50277 standard; Peptide; 7 AA.  
 AC ABP50277;  
 XX

DT 28-AUG-2002 (first entry)  
 XX Zinc finger protein related peptide motif SEQ ID NO:2705.  
 DE Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 XX  
 KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 OS Homo sapiens.  
 OS Synthetic.  
 XX WO200242459-A2.  
 PN 30-MAY-2002.  
 PD 20-NOV-2001; 2001WO-US43438.  
 PF 20-NOV-2000; 2000US-0716637.  
 PR 20-NOV-2000; 2000US-0716637.  
 PA (SANG-) SANGAMO BIOSCIENCES INC.  
 XX  
 XX Liu Q;  
 PI WPI; 2002-500284/53.  
 DR  
 XX  
 PT New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N- to  
 PT C-terminus -  
 PS  
 XX Example 1; Page 57; 81pp; English.  
 CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
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 CC (I1) comprising (1); (2) a polynucleotide (I1) encoding (1) or (I1); and  
 CC (3) designing (M) (1) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
 CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target sub-site, thus designing (1)  
 CC that binds to a target site. (1) is useful for recognition of triplet  
 CC target sub-sites having the nucleotide G in the 5'-most position of the  
 CC sub-site. (1) is useful in studying gene function, and for human  
 CC therapeutic and plant engineering. (1), (I1) or (I1) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (1) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.  
 XX  
 SQ Sequence 7 AA;  
 Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05; Indels 0; Gaps 0;  
 Matches 7; Conservative 0; Mismatches 0;  
 QY 1 DRSNLTNR 7  
 DB 1 DRSNLTNR 7  
 RESULT 35  
 ID ABB50311 standard; Peptide; 7 AA.  
 XX ABB50311;  
 AC  
 XX 28-AUG-2002 (first entry)  
 DT  
 XX Zinc finger protein related peptide motif SEQ ID NO:3216.  
 DE

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 KM  
 XX Homo sapiens.  
 OS Synthetic.  
 OS  
 XX WO200242459-A2.  
 PN 30-MAY-2002.  
 PD 20-NOV-2001; 2001WO-US43438.  
 PF 20-NOV-2000; 2000US-0716637.  
 PR 20-NOV-2000; 2000US-0716637.  
 PA (SANG-) SANGAMO BIOSCIENCES INC.  
 XX  
 XX Liu Q;  
 PI WPI; 2002-500284/53.  
 DR  
 XX  
 PT New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N- to  
 PT C-terminus -  
 PS  
 XX Example 1; Page 58; 81pp; English.  
 CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
 CC (I1) comprising (1); (2) a polynucleotide (I1) encoding (1) or (I1); and  
 CC (3) designing (M) (1) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
 CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target sub-site, thus designing (1)  
 CC that binds to a target site. (1) is useful for recognition of triplet  
 CC target sub-sites having the nucleotide G in the 5'-most position of the  
 CC sub-site. (1) is useful in studying gene function, and for human  
 CC therapeutic and plant engineering. (1), (I1) or (I1) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (1) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214, and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.  
 XX  
 SQ Sequence 7 AA;  
 Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05; Indels 0; Gaps 0;  
 Matches 7; Conservative 0; Mismatches 0;  
 QY 1 DRSNLTNR 7  
 DB 1 DRSNLTNR 7  
 RESULT 36  
 ID ABB50373 standard; Peptide; 7 AA.  
 XX ABB50373;  
 AC  
 XX 28-AUG-2002 (first entry)  
 DT  
 XX Zinc finger protein related peptide motif SEQ ID NO:2737.  
 DE  
 XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
 XX





XX Lin Q;  
PI WPI; 2002-500284/53.  
DR  
XX  
XX  
PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -  
PS Example 1; Page 59; 81pp; English.  
XX  
CC The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designating (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such that  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (II), (II) or (III) is useful in  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.  
XX  
SQ Sequence 7 AA;  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 DRSNLTTR 7  
Db 1 DRSNLTTR 7  
RESULT 41  
ABP50542  
ID ABP50542 standard; Peptide; 7 AA.  
XX  
AC ABP50542;  
XX  
XX 28-AUG-2002 (first entry)  
DT  
XX  
XX Zinc finger protein related peptide motif SEQ ID NO:3293.  
DE  
XX  
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
KM  
XX  
XX Homo sapiens.  
OS  
XX  
XX Synthetic.  
PN WO200242459-A2.  
XX  
XX 30-MAY-2002.  
PD  
XX  
XX 20-NOV-2001; 2001WO-US43438.  
PF  
XX  
XX 20-NOV-2000; 2000US-0716637.  
PR  
XX  
XX (SANG-) SANGAMO BIOSCIENCES INC.  
PA  
XX  
XX Lin Q;  
PI  
XX

DR WPI; 2002-500284/53.  
XX  
XX  
XX New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -  
PS Example 1; Page 59; 81pp; English.  
XX  
CC The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
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CC (3) designating (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such that  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (II), (II) or (III) is useful in  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.  
XX  
SQ Sequence 7 AA;  
Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
QY 1 DRSNLTTR 7  
Db 1 DRSNLTTR 7  
RESULT 42  
ABP50545  
ID ABP50545 standard; Peptide; 7 AA.  
XX  
AC ABP50545;  
XX  
XX 28-AUG-2002 (first entry)  
DT  
XX  
XX Zinc finger protein related peptide motif SEQ ID NO:3294.  
DE  
XX  
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.  
KM  
XX  
XX Homo sapiens.  
OS  
XX  
XX Synthetic.  
PN WO200242459-A2.  
XX  
XX 30-MAY-2002.  
PD  
XX  
XX 20-NOV-2001; 2001WO-US43438.  
PF  
XX  
XX 20-NOV-2000; 2000US-0716637.  
PR  
XX  
XX (SANG-) SANGAMO BIOSCIENCES INC.  
PA  
XX  
XX Lin Q;  
PI  
XX  
XX New zinc finger protein that binds to target site, useful in studying

PT gene function and for human therapeutics and plant engineering,  
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PT C-terminus -

Example 1; Page 59; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
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CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
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CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
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CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (I) is useful in studying gene function, and for human  
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CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05; Indels 0; Gaps 0;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7  
| | | | |  
Db 1 DRSNLTTR 7

RESULT 43

ABP50823 standard; Peptide; 7 AA.

AC ABP50823;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:2887.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

PP WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
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XX Example 1; Page 61; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
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CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
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CC target sub-sites having the nucleotide G in the 5'-most position of the  
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CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05; Indels 0; Gaps 0;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7  
| | | | |  
Db 1 DRSNLTTR 7

RESULT 44

ABP50858 standard; Peptide; 7 AA.

AC ABP50858;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3898.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

PP WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
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CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
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CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (II) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05; Mismatches 0; Indels 0; Gaps 0;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTNR 7

DB 1 DRSNLTNR 7

#### RESULT 45

ABP50861  
ID ABP50861 standard; Peptide; 7 AA.

XX AC ABP50861;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3899.

XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX OS Homo sapiens.

XX OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

XX PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -

PS Example 1; Page 61; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and

CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
CC finger such that it binds to the S3 target sub-site, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sub-sites having the nucleotide G in the 5'-most position of the  
CC sub-site. (II) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05; Mismatches 0; Indels 0; Gaps 0;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTNR 7

DB 1 DRSNLTNR 7

#### RESULT 46

ABP50914  
ID ABP50914 standard; Peptide; 7 AA.

XX AC ABP50914;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3417.

XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX OS Homo sapiens.

XX OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

XX PI Liu Q;

DR WPI; 2002-500284/53.  
PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -

PS Example 1; Page 62; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and



CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target substrate, selecting the F2 zinc finger such  
CC that it binds to the S2 target substrate, and selecting the F3 zinc  
CC finger such that it binds to the S3 target substrate, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target substrates having the nucleotide G in the 5'-most position of the  
CC substrate. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
Db 1 DRSNLTR 7

RESULT 47  
ABP50920 standard; Peptide; 7 AA.  
XX  
XX ABP50920;

DT 28-AUG-2002 (first entry)

XX Zinc finger protein related peptide motif SEQ ID NO:3419.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX Homo sapiens.  
XX Synthetic.

XX MO200242459-A2.

XX 30-MAY-2002.

XX 20-NOV-2001; 2001MO-US43438.

XX 20-NOV-2000; 2000US-0716637.

XX (SANG-) SANGAMO BIOSCIENCES INC.

XX Liu Q;

XX WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering, to  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -  
PS Example 1; Page 62; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
XX a target site, comprising a first (F1), a second (F2), and a third (F3)  
XX zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
XX target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
XX and a third (S3) target substrate. Also described are: (i) a polypeptide  
XX (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
XX (3) designing (M) (I) involves selecting the F1 zinc finger such that  
XX it binds to the S1 target substrate, selecting the F2 zinc finger such  
XX that it binds to the S2 target substrate, and selecting the F3 zinc

CC finger such that it binds to the S3 target substrate, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target substrates having the nucleotide G in the 5'-most position of the  
CC substrate. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
Db 1 DRSNLTR 7

RESULT 48  
ABP51092 standard; Peptide; 7 AA.  
XX  
XX ABP51092;

DT 28-AUG-2002 (first entry)

XX Zinc finger protein related peptide motif SEQ ID NO:3976.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX Homo sapiens.  
XX Synthetic.

XX MO200242459-A2.

XX 30-MAY-2002.

XX 20-NOV-2001; 2001MO-US43438.

XX 20-NOV-2000; 2000US-0716637.

XX (SANG-) SANGAMO BIOSCIENCES INC.

XX Liu Q;

XX WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering, to  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -  
PS Example 1; Page 63; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
XX a target site, comprising a first (F1), a second (F2), and a third (F3)  
XX zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
XX target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
XX and a third (S3) target substrate. Also described are: (i) a polypeptide  
XX (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
XX (3) designing (M) (I) involves selecting the F1 zinc finger such that  
XX it binds to the S1 target substrate, selecting the F2 zinc finger such  
XX that it binds to the S2 target substrate, and selecting the F3 zinc  
XX finger such that it binds to the S3 target substrate, thus designing (I)  
XX that binds to a target site. (I) is useful for recognition of triplet  
XX target substrates having the nucleotide G in the 5'-most position of the

CC subunit. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7  
 |||||  
 Db 1 DRSNLTR 7

RESULT 49

ABP51101  
 ID ABP51101 standard; Peptide; 7 AA.

XX ABP51101;

DT 28-AUG-2002 (first entry)

XX Zinc finger protein related peptide motif SEQ ID NO:3979.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

XX 30-MAY-2002.

XX 20-NOV-2001; 2001WO-US43438.

XX 20-NOV-2000; 2000US-0716637.

XX (SANG-) SANGAMO BIOSCIENCES INC.

XX Liu Q;

XX WPI: 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N-  
 PT C-terminus -

XX Example 1; Page 63; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target subunit. Also described are: (I) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target subunit, selecting the F2 zinc finger such  
 CC that it binds to the S2 target subunit, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target subunit, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target subunits having the nucleotide G in the 5'-most position of the  
 CC subunit. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within

CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7  
 |||||  
 Db 1 DRSNLTR 7

RESULT 50

ABP51147  
 ID ABP51147 standard; Peptide; 7 AA.

XX ABP51147;

DT 28-AUG-2002 (first entry)

XX Zinc finger protein related peptide motif SEQ ID NO:2995.

XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

XX 30-MAY-2002.

XX 20-NOV-2001; 2001WO-US43438.

XX 20-NOV-2000; 2000US-0716637.

XX (SANG-) SANGAMO BIOSCIENCES INC.

XX Liu Q;

XX WPI: 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
 PT gene function and for human therapeutics and plant engineering,  
 PT comprises first, second and third zinc fingers, ordered from N-  
 PT C-terminus -

XX Example 1; Page 63; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target subunit. Also described are: (I) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target subunit, selecting the F2 zinc finger such  
 CC that it binds to the S2 target subunit, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target subunit, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target subunits having the nucleotide G in the 5'-most position of the  
 CC subunit. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity

CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
DB 1 DRSNLTR 7

## RESULT 51

ABP51150 standard; Peptide; 7 AA.

AC ABP51150;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:2996.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -

PS Example 1; Page 63; 81bp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target subsequence. Also described are: (I), a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target subsequence, selecting the F2 zinc finger such  
CC that it binds to the S2 target subsequence, and selecting the F3 zinc  
CC finger such that it binds to the S3 target subsequence, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sites having the nucleotide G in the 5'-most position of the  
CC subsequence. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given

CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7  
DB 1 DRSNLTR 7

## RESULT 52

ABP51159 standard; Peptide; 7 AA.

AC ABP51159;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:2999.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
PT gene function and for human therapeutics and plant engineering,  
PT comprises first, second and third zinc fingers, ordered from N- to  
PT C-terminus -

PS Example 1; Page 63; 81bp; English.

XX The present invention describes a zinc finger protein (I) that binds to  
CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
CC and a third (S3) target subsequence. Also described are: (I), a polypeptide  
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that  
CC it binds to the S1 target subsequence, selecting the F2 zinc finger such  
CC that it binds to the S2 target subsequence, and selecting the F3 zinc  
CC finger such that it binds to the S3 target subsequence, thus designing (I)  
CC that binds to a target site. (I) is useful for recognition of triplet  
CC target sites having the nucleotide G in the 5'-most position of the  
CC subsequence. (I) is useful in studying gene function, and for human  
CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
CC therapeutic methods to modulate the expression of a target region within  
CC a subject, in diagnostic methods for sequence specific detection of  
CC target nucleic acid in a sample, and in assays to determine the  
CC phenotype and function of gene expression. (I) has improved affinity  
CC and specificity for their target sequences, as well as enhanced  
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
CC represent DNA target sequences and zinc finger peptides which are given  
CC in the exemplification of the present invention.

XX Sequence 7 AA.

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7  
 |||||  
 1 DRSNLTR 7

RESULT 53  
 ABP51180  
 ID ABP51180 standard; peptide; 7 AA.

AC ABP51180;  
 XX 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3006.

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

XX Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

XX 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying  
 gene function and for human therapeutics and plant engineering.  
 PT comprises first, second and third zinc fingers, ordered from N- to  
 C-terminus -

PS Example 1; Page 63; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to  
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)  
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the  
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),  
 CC and a third (S3) target sub-site. Also described are: (1) a polypeptide  
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and  
 CC (3) designing (M) (i) involves selecting the F1 zinc finger such that  
 CC it binds to the S1 target sub-site, selecting the F2 zinc finger such  
 CC that it binds to the S2 target sub-site, and selecting the F3 zinc  
 CC finger such that it binds to the S3 target sub-site, thus designing (I)  
 CC that binds to a target site. (I) is useful for recognition of triplet  
 CC target sub-sites having the nucleotide G in the 5'-most position of the  
 CC sub-site. (I) is useful in studying gene function, and for human  
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in  
 CC therapeutic methods to modulate the expression of a target region within  
 CC a subject, in diagnostic methods for sequence specific detection of  
 CC target nucleic acid in a sample, and in assays to determine the  
 CC phenotype and function of gene expression. (I) has improved affinity  
 CC and specificity for their target sequences, as well as enhanced  
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230  
 CC represent DNA target sequences and zinc finger peptides which are given  
 CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7  
 |||||  
 1 DRSNLTR 7

RESULT 54  
 ABG75740  
 ID ABG75740 standard; peptide; 7 AA.

XX ABG75740;

DT 25-APR-2003 (first entry)

DE Zinc finger protein recognition helix SB89.

KW Zinc finger protein; zinc finger protein-regulated gene; cancer;  
 nephritis; prostate hypertrophy; haematopoiesis; osteoporosis; obesity;  
 cardiovascular disease; diabetes; recognition helix.

OS Synthetic.

XX US2002146691-A1.

PD 10-OCT-2002.

XX 06-DEC-2000; 2000US-0731558.

PR 06-DEC-1999; 99US-0456100.

PA (CASE/) CASE C. C.

PA (LIU/) LIU Q.

PA (REBA/) REBA E. J.

PA (WOLF/) WOLFE A. P.

PI Case CC, Liu Q, Rebar EJ, Wolfe AP;

DR WPI; 2003-247121/24.

PT Identification of gene(s) associated with selected phenotype comprises  
 using libraries of randomized zinc finger proteins -

PS Example 1; Page 15; 26pp; English.

CC The invention relates to identification of gene(s) associated with a  
 CC selected phenotype comprising providing a nucleic acid library of  
 CC nucleotide sequences that encode at least partially randomised zinc  
 CC finger proteins transducing cells with expression vectors, culturing and  
 CC assaying the cells for a selected phenotype, and identifying the  
 CC gene(s) whose expression is modulated by expression of a zinc finger  
 CC protein. The method is used for the identification of gene(s) associated  
 CC with a selected phenotype which is related to cancer, nephritis,  
 CC prostate hypertrophy, haematopoiesis, osteoporosis, obesity,  
 CC cardiovascular disease, or diabetes. It is useful in academic  
 CC laboratories, pharmaceutical companies, genome companies,  
 CC agricultural companies, chemical companies, and in the biotechnology  
 CC industry. The present sequence is a zinc finger protein nucleotide  
 CC triplet recognition helix incorporated into a library of the  
 CC invention, a combination of any 5 out of 12 helices would recognise a  
 CC unique 15 base pair sequence.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 24; Length 7;  
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;  
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7  
 |||||  
 1 DRSNLTR 7

DB 1 DRSNLTR 7

RESULT 55  
AAR89200  
ID AAR89200 standard; peptide; 89 AA.  
XX  
AC AAR89200;  
XX  
XX 03-OCT-1996 (first entry)

DE Zinc finger DNA binding domain binds to G12V mutation of ras oncogene.

XX Zinc finger; DNA binding domain; Zif268; mouse; transcription factor;  
KM alpha-helix; library; bacteriophage; fusion protein; minor coat protein;  
KM filamentous; regulatory sequence; inhibition; expression; oncogene; ras.  
XX

OS Synthetic.

XX Key Location/Qualifiers

FT Domain 9..29 /note= "forms zinc finger 1 domain of protein"

FT Domain 37..57 /note= "forms zinc finger 2 domain of protein"

FT Domain 65..85 /note= "forms zinc finger 3 domain of protein"

XX WO9606166-A1.

XX 29-FEB-1996.

XX 17-AUG-1995; 95WO-GB01949.

XX 18-JUL-1995; 95GB-0014698.

XX 20-AUG-1994; 94GB-0016880.

XX 08-NOV-1994; 94GB-0022534.

XX (MEDI-) MEDICAL RES COUNCIL.

XX Choo Y, Garcia I, Klug A;

XX WPI; 1996-151369/15.

XX DNA library encoding zinc finger polypeptide(s) having randomised  
PT amino acid sequence - used to inhibit oncogene expression and to  
PT regulate cell division, i.e. for use in the treatment of cancer.

XX Example 5; Fig 15; 87pp; English.

XX This is an example of a modified zinc finger (ZF) DNA binding regions  
CC which binds to the G12V mutant of ras oncogene. The modified ZF was  
CC constructed by annealing synthetic oligonucleotides such that the  
CC residues at pos. +3 of the alpha-helix structures of the ZF were altered.  
CC The modified ZF DNA binding regions were then expressed on the surface of  
CC a phage as fusions with the minor coat protein (pIII) from the  
CC bacteriophage fd, in the plasmid pCMVTA5E. The invention relates to the  
CC generation of ZF proteins contg. modifications at amino acid pos. -1, +1,  
CC +2, +3, +5, +6 and +8 relative to the first residue of the alpha-helix in  
CC the ZF. The modified ZF DNA binding proteins can be screened for binding  
CC to defined nucleotide sequences or to new nucleotide sequences. The novel  
CC ZF proteins can be used to regulate the expression of desired genes by  
CC generating ZF proteins that bind to defined regulatory sequences of the  
CC desired genes. Esp. the ZF protein can be used to inhibit the expression  
CC of an oncogene e.g. a ras or BCR-ABL fusion oncogene.

XX Sequence 89 AA;

Query Match 100.0%; Score 35; DB 17; Length 89;

Best Local Similarity 100.0%; Pred. No. 2.2; Mismatches 0; Gaps 0;  
Matches 7; Conservative 0; Indels 0;

OY 1 DRSNLTR 7

DB 74 DRSNLTR 80

Search completed: February 23, 2004, 11:42:07  
Job time : 36 secs